

SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC.

Wetland Delineations Ecological Studies Site Assessments Project Planning Soil Testing

March 25, 2019

ATTN: Andrew Levesque
Director of Facilities
SODEXO at University of Saint Joseph
1678 Asylum Avenue
West Hartford, CT, 06117

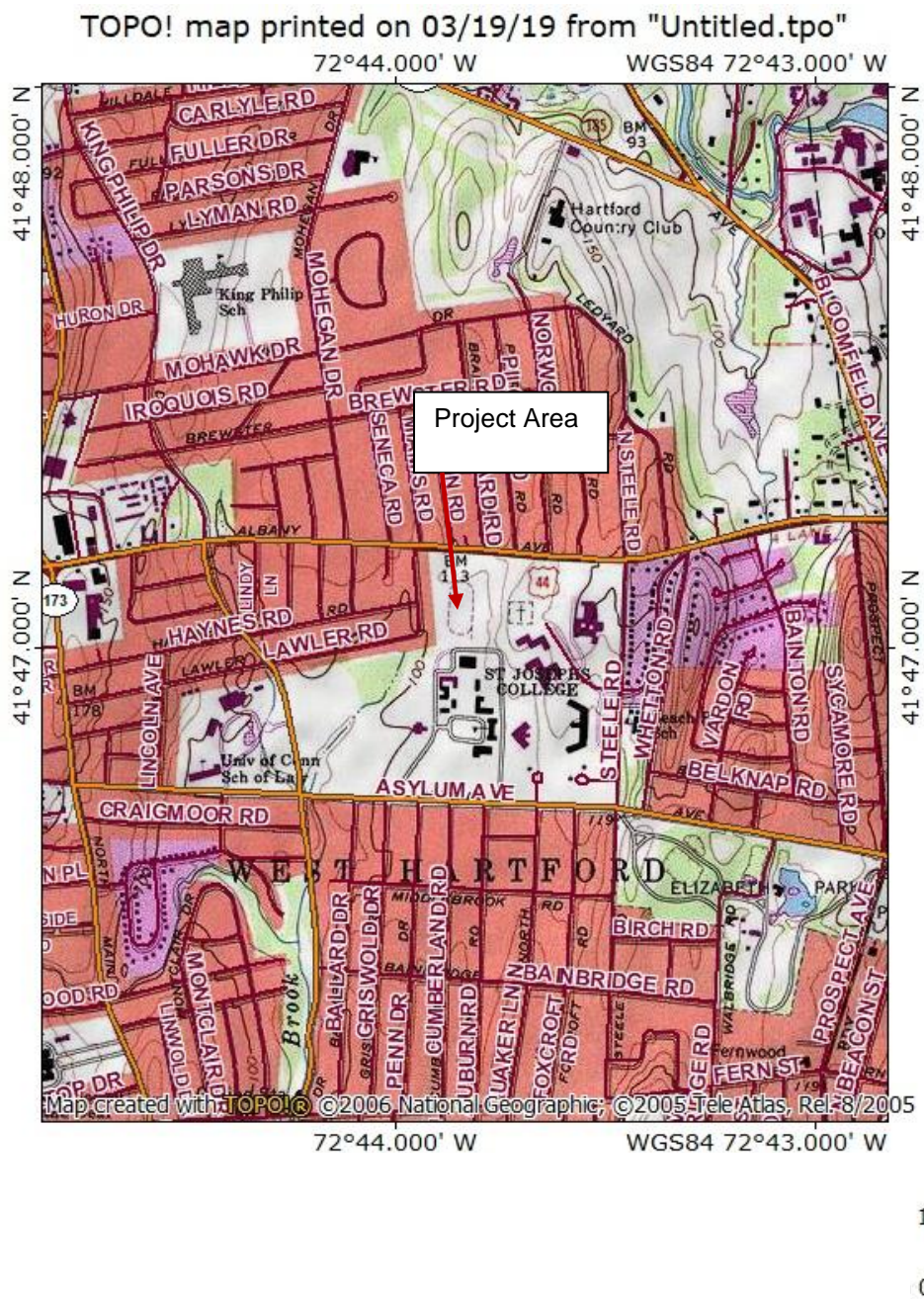
**RE: Wetland Assessment Report
Athletic Field Renovation Project
University of St. Joseph, West Hartford, CT**

Dear Mr. Levesque:

In accordance with your request, Jennifer Beno, Biologist/Wetland Scientist, with Soil Science and Environmental Services, Inc. (SSES) inspected the wetlands near the athletic field renovation project area on March 19, 2019. Aside for some patchy snow in the southwestern portion of the project area, no snow cover was encountered within the project area during the inspection. The purpose of the inspection was to observe the existing conditions (vegetation and wildlife) and primary functions of the wetlands near the project area. The wetlands were delineated by SSES in January 2019. We reviewed the plan sheets titled "University of Saint Joseph Athletic Field Renovation Project, 1678 Asylum Avenue, West Hartford, Connecticut," dated 03-22-19 that were prepared by SMRT Architects and Engineers in order to determine direct impacts to wetlands caused by the proposed athletic field renovation project.

General Site Description

The project area is associated with the existing track and field at the University of St. Joseph which is situated in the northeastern portion of West Hartford (Figure 1). The track and field renovation project area is located in the northwestern portion of the University of St. Joseph property. Generally, the project area is bordered by tennis courts, a softball field, maintained lawn, and Albany Avenue (Route 44) to the north, by a paved roadway, maintained lawn, and the athletic building with associated paved parking to the east, by a paved road, maintained lawn, and buildings to the south, and by a narrow band of wooded upland and an off-site residential development to the west. The narrow band of wooded upland is dominated by oaks, crab apple, spruce, tatarian honeysuckle, multiflora rose, Queen Ann's lace, and goldenrod. See Figure 2 for the locations of existing conditions.



**SOIL SCIENCE and
ENVIRONMENTAL
SERVICES, INC.**

U.S.G.S. Topography Map
Proposed Athletic Field Project Area
University of St. Joseph,
1678 Asylum Avenue
West Hartford, CT

Date 3/19/19

Figure No. 1

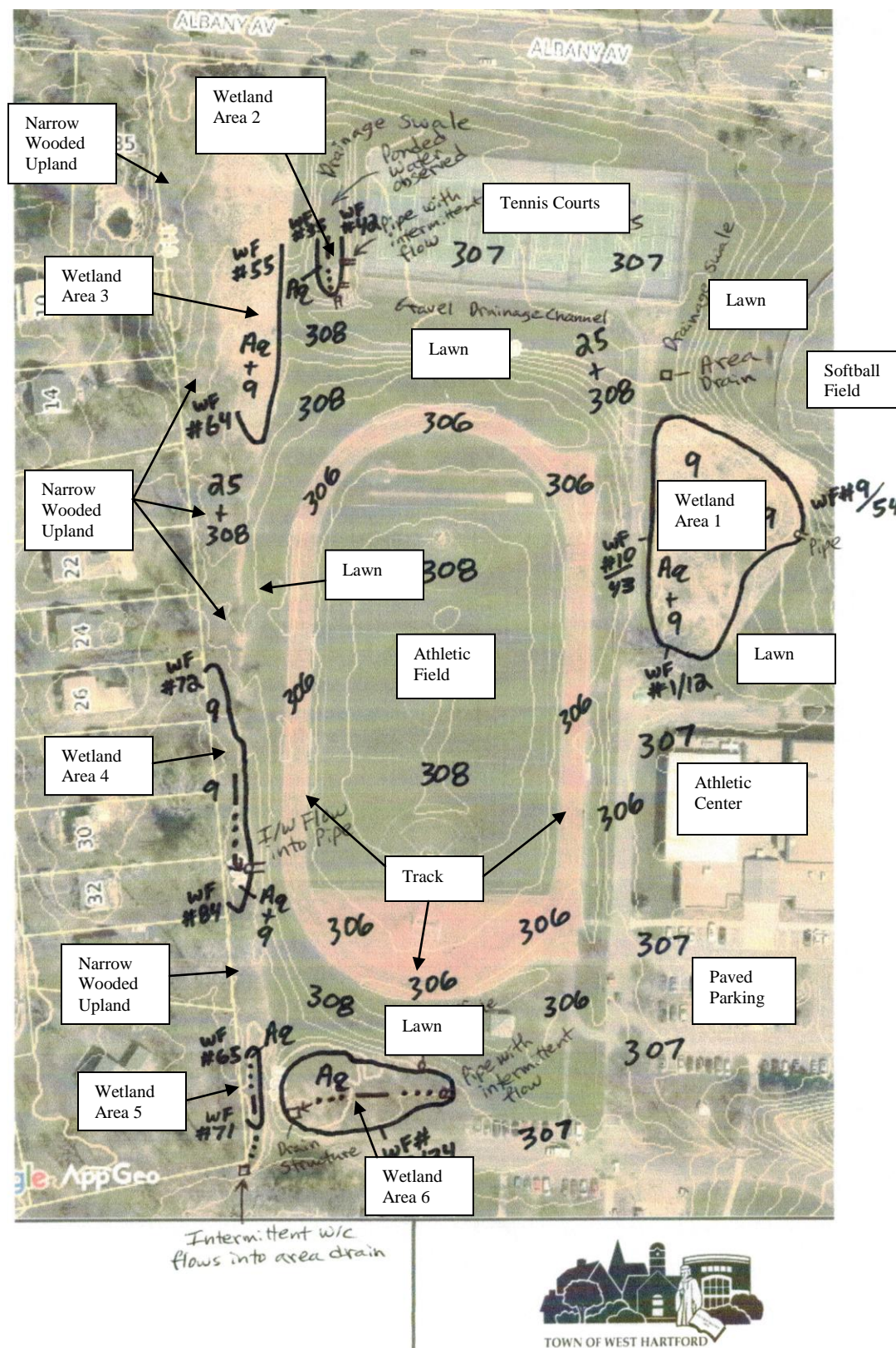


Figure 2 – Existing Conditions (aerial photo from Town of West Hartford website)

A storm water drainage system is present within the upland areas in and adjacent to the athletic field renovation project site. Numerous drains as well as gravel and grassed drainage swales were observed during our inspection. A few of the drains were observed to discharge directly to existing wetland areas.



Tennis courts, gravel drainage feature, maintained lawn and existing track at north end of project area (3/19/19).



Paved path, storage building, maintained lawn and existing track at south end of project area (3/19/19).



Paved paths, maintained lawn and existing track at north end of project area (3/19/19).

Regulated Wetlands Description

In January 2019, SSES delineated the wetlands near the athletic field renovation project area (Figure 2). Six wetlands were delineated near the project site. One wetland is located to the east of the northern end of the track, two wetlands are located to the northwest of the track, one wetland is located to the west of the track and two wetlands are located to the southwest of the track. Of the six wetlands, two are detention basins, two are located within a slight swale along the western property boundary, and two are maintained as wet meadow areas. All of the wetlands were previously disturbed as evidenced by the presence of the Aquents soil type. Each wetland is bordered by maintained lawn and previously developed areas. See SSES Wetlands Delineation Report from January 2019 under separate cover for soils information.

Area 1 – Eastern Wetland

Area 1 is an isolated wetland that was delineated to the east of the northern end of the track. This wetland is dominated by a wet meadow wetland community. Wetland Area 1 is bordered by a steep fill slope containing staghorn sumac, and by maintained lawn areas, solar panels, a softball field, a mobile classroom, paved roadways, the athletic center and the track and field area. Storm water runoff discharges to the eastern portion of the wetland area from a small pipe. The tree canopy cover within the wetland is sparse, the shrub growth within portions of the wetland is moderately dense to sparse and the herbaceous vegetation growth within the wetland is dense. The dominant vegetation observed within the wetland during the March inspection includes cottonwood, pin oak, red maple, dogwoods, highbush blueberry, sedges, soft rush, willowherb, sensitive fern, purple loosestrife, and blue vervain. Shallow standing water up to approximately 3 inches deep was observed within portions of the wetland area during the inspection. Frost was observed within the surface soils during the inspection.

The primary functions provided by this wetland include groundwater discharge, sediment and nutrient retention and removal, and wildlife habitat. These functions are limited by the size of the wetland and the surrounding land use.



Wetland Area 1 (3/19/19).

Area 2 – Detention Basin Adjacent to Tennis Courts

Area 2 is a regulated wetland that was delineated within a detention basin located to the west of the existing tennis courts. The detention basin is maintained as a mowed wet meadow (lawn) with shrub plantings along the top of the steep slope. This wetland is bordered by maintained lawn areas and the existing tennis courts. Shallow standing water up to approximately 2 inches deep was observed within the central portion of the basin during the March 2019 inspection. Storm water discharges to the detention basin via overland flow and via storm water drainage pipes in the southeastern portion of the basin. No flow was observed discharging from the pipes during the March 2019 inspection. The tree and shrub growth within the basin is sparse and the herbaceous vegetation growth within the basin is dense. The dominant species observed within this wetland during the inspection include mowed lawn grasses, spicebush, dogwood, sweet pepperbush, highbush blueberry, and cottonwood.

The primary functions provided by this wetland include storm water detention, sediment and nutrient retention and removal, and wildlife habitat. The wildlife habitat within this wetland area is limited by the maintenance of the lawn.



Wetland Area 2 – detention basin (3/19/19).

Area 3 – Northwestern Wetland Along Property Boundary

Area 3 consists of a wet meadow community that was delineated to the northwest of the northern end of the track along the property boundary. This wetland is bordered by maintained lawn, wooded upland, and off-site residential development. The tree canopy cover and shrub growth within the wetland is sparse and the herbaceous vegetation growth within the wetland is dense. The dominant vegetation observed within the wetland during the March inspection includes pin oak, dogwood, red maple and white pine saplings, multiflora rose, sedges, soft rush, willowherb, sensitive fern, blue vervain, and swamp milkweed. Frost was observed within the surface soils during the inspection.

The primary functions provided by this wetland include groundwater discharge, sediment and nutrient retention and removal, and wildlife habitat. These functions are limited by the size of the wetland and the surrounding land use.



Wetland Area 3 (3/19/19).

Area 4 – Western Wetland Along Property Boundary

Area 4 is a very narrow wooded swamp that was delineated to the west of the track within a slight swale that exists along the property boundary. This wetland is bordered by maintained lawn, existing lights, the track, wooded upland, and off-site residential development. A culvert pipe was observed within the southeastern portion of the wetland. No flow was observed discharging from the culvert pipe during the March 2019 inspection. The tree canopy cover within the wetland is dense and the shrub understory growth within the wetland is moderately dense while the herbaceous vegetation growth appears to be sparse. The dominant vegetation observed within the wetland during the March inspection includes oaks, apple, red maple, multiflora rose, silky dogwood, willow, aster, and goldenrod. No standing water was observed within the wetland during the inspection. The surface soils were saturated and no frost was observed within the surface soils during the inspection.

The primary functions provided by this wetland include groundwater discharge, sediment and nutrient retention and removal, and wildlife habitat. These functions are limited by the small size of the wetland area.



Wetland Area 4 (3/19/19).

Area 5 – Southwestern Wetland Along Property Boundary

Area 5 is a very narrow wooded swamp that was delineated to the southwest of the track within a slight swale that exists along the property boundary. It is located to the south of Wetland 4 within the same swale. This wetland is bordered by maintained lawn, wooded upland, a chain link fence, and off-site residential development. The tree canopy cover within the wetland is dense and the shrub understory growth within the wetland is moderately dense while the herbaceous vegetation growth appears to be sparse. The dominant vegetation observed within the wetland during the March inspection includes pin oak, red maple, multiflora rose, silky dogwood, tatarian honeysuckle, and willowherb. Shallow standing water, approximately 1 inch deep, was observed within the central portion of the wetland during the inspection. The surface soils within the remainder of the wetland were saturated. No frost was observed within the surface soils during the inspection. Any concentrated water flow discharges from the wetland area via an intermittent watercourse and into the storm drainage system to the southwest of the wetland.

The primary functions provided by this wetland include groundwater discharge, sediment and nutrient retention and removal, and wildlife habitat. These functions are limited by the small size of the wetland area.



Wetland Area 5 (3/19/19).

Area 6 – Detention Basin South of Track

Area 6 is a regulated wetland that was delineated within a detention basin located to the south of the existing track. The northwestern portion of the detention basin is maintained as a mowed wet meadow (lawn). The remainder of the detention basin is dominated by a complex of wooded swamp and shallow marsh communities. This wetland is bordered by maintained lawn areas, the track, a storage building, and paved driveway and parking areas. Shallow standing water up to approximately 2 to 3 inches deep was observed within the central portion of the basin during the March 2019 inspection. Storm water discharges to the detention basin via overland flow and via a storm water drainage pipe observed in the eastern portion of the basin. Water discharges from the detention basin through an outlet structure in the western portion of the basin. The tree and shrub growth within the wetland is moderately dense and the herbaceous vegetation growth within the wetland is dense. The dominant species observed within Area 6 during the inspection include mowed lawn grasses, common reedgrass, pin oak, willow, red maple, elm, dogwood, multiflora rose, sedges, aster, and sensitive fern. Patchy snow and partially frozen surface soils were observed in the northern portion of the basin during the March inspection.

The primary functions provided by this wetland include storm water detention, sediment and nutrient retention and removal, and wildlife habitat.



Wetland Area 6 (3/19/19).

Wildlife

Wildlife observed utilizing the project area during the March 2019 inspection include gray squirrel, mockingbird, chickadee, mourning dove, red winged blackbird, robin, blue jay, cardinal, song sparrow, junco, starling, crow, and woodcock. Most of these species are common in suburban areas of CT. In addition to the site inspection, SSES reviewed the December 2018 CT Department of Energy and Environmental Protection (DEEP) Natural Diversity Data Base (NDDB) division map available on-line for the site and immediate vicinity. According to the map, no Federal and/or State listed Endangered or Threatened species or Species of Special Concern are known to exist on or near the site. See included map (Appendix II).

Impacts to Regulated Wetlands and Watercourses

We reviewed the plan sheets titled "University of Saint Joseph Athletic Field Renovation Project, 1678 Asylum Avenue, West Hartford, Connecticut," dated 03-22-19 that were prepared by SMRT Architects and Engineers in order to determine direct impacts to wetlands caused by the proposed athletic field renovation project. According to the plan sheets, the construction of the proposed athletic field renovation project will have no direct impacts (clearing, filling, grading) to the wetlands near the project site.

Construction activities associated with the athletic field renovation project are proposed to occur within the regulated upland review area. The majority of the regulated upland review area adjacent to the wetlands near the project site is maintained as lawn or has been developed. The construction activities associated with the proposed athletic field renovation project will occur within the footprint of the existing track and field area, except for two small areas to the northeast and northwest of the track. These small areas to the northeast and northwest of the track are currently maintained as lawn.

According to SMRT, the water supply to the surrounding wetland areas will remain the same post-construction.

SMRT proposes to treat the runoff from the new field area using a Contech Storm Filter, or similar product, before the runoff enters the storm water drainage system and downstream wetlands and watercourses.

The uplands within and near the proposed athletic field renovation project area were previously disturbed for construction of the track and field, paved paths, driveway, and parking areas, mobile class room, university buildings, tennis courts, soft ball field, storm water drainage, irrigation, lighting, and maintained lawn areas. All of the wetlands near the project area were either created features as part of the storm water drainage system or were disturbed by previous development. The proposed athletic field renovation project will occur within the footprint of the existing track and field. No vegetation removal, other than the in-field lawn area, will occur as part of this project. Based on our site inspection and review of the proposed development plans, it is our opinion that the proposed construction activities associated with the project will not have

a significant adverse impact on the functions that are provided by the wetlands located near the project area if developed as proposed in the referenced plans and including Town approved erosion and sedimentation control measures.

Recommendations

SSES recommends that the proposed silt fence and hay bale installation continue along the entire western side of the project area.

SSES recommends that all erosion and sedimentation control measures approved by the Town be properly installed and maintained throughout the duration of the project.

Respectfully submitted,

SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC.



Jennifer L. Beno
Biologist/Wetland Scientist

Appendix I: Highway Methodology Data Forms and Supporting Documents

Table: WETLAND FUNCTION-VALUE EVALUATION FORM**Wetland Area 1 – Athletic Field Renovation Project Area, University of St. Joseph,**Wetland I.D. West Hartford, CTTotal area of wetland _____ Human made? No Is wetland part of a wildlife corridor? No Or a “habitat island”? YesLat. ±41.78504°N Long. ±72.72999°WAdjacent land use: fill; mowed lawn; athletic fields Distance to nearest roadway or development 0' (fill)Prepared by JLB Date 3/22/19Dominant wetland systems present PEM2E Contiguous undeveloped buffer zone present No

Wetland Impact:

Type: N/A Area 0Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

Evaluation based on:

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (*see attached*)Office Y Field Y

Corps manual wetland delineation

Completed? Y _____ N X

Function/Value	Occurrence		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge	<u>X</u>		12, 13, 15	<u>X</u>	Water quality designated as Class GA within the area of the project site.
Floodflow Alteration	<u>X</u>		2, 5, 9		Wetland area can detain limited water. Not associated with a watercourse. Limited watershed.
Fish and Shellfish Habitat		<u>X</u>	None		No finfish habitat is present. No watercourses or waterbodies are associated with this wetland.
Sediment/Toxicant Retention	<u>X</u>		4, 5	<u>X</u>	No significant source of sediments in adjacent watershed. Any sediments could settle out in this wetland. Dense vegetation within this wetland.
Nutrient Removal	<u>X</u>		3, 4, 7, 8, 9	<u>X</u>	Nutrients are trapped and removed within this wetland. Dense vegetation.
Production Export		<u>X</u>	1, 2, 4, 7, 12, 14		Nutrients are attenuated by the wetland.
Sediment/Shoreline Stabilization		<u>X</u>	N/A		This wetland is not associated with a watercourse.
Wildlife Habitat	<u>X</u>		2, 8, 13, 14, 16, 17	<u>X</u>	Trees, shrubs, and herbaceous vegetation provide habitat.
Recreation		<u>X</u>	None		Passive only.
Educational Scientific Value	<u>X</u>		8, 9, 10, 16		On school property. Potential for education.
Uniqueness/Heritage		<u>X</u>	8, 17, 18		Wetland is located within a highly disturbed area. Potential for education.
Visual Quality/Aesthetics	<u>X</u>		3, 9		Provides a contrast with the adjacent mowed lawn and development. Some blooms and autumn foliage.
ES Endangered Species Habitat		<u>X</u>	None		None observed. CT DEEP Natural Diversity Data Base map indicates no known listed species. See map dated Dec 2018. Appendix II.
Other					

* REFER TO BACK UP LIST OF CONSIDERATIONS (ATTACHED)

Table: WETLAND FUNCTION-VALUE EVALUATION FORM

Wetland Area 2 (detention basin) – Athletic Field Renovation Project Area, University of St. Joseph,

Total area of wetland _____ Human made? Yes Is wetland part of a wildlife corridor? No Or a “habitat island”? _____
 Adjacent land use: fill; tennis courts Distance to nearest roadway or development 0' (fill)
 Dominant wetland systems present PEM2E (mowed) Contiguous undeveloped buffer zone present No
 Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper
 How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (*see attached*)

Wetland I.D. West Hartford, CT
 Lat. ±41.78581°N Long. ±72.73128°W
 Prepared by JLB Date 3/22/19
 Wetland Impact:
 Type: N/A Area 0
 Evaluation based on:
 Office Y Field Y
 Corps manual wetland delineation
 Completed? Y _____ N X

Function/Value	Occurrence		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge		<u>X</u>	12, 13, 15		Water quality designated as Class GA within the area of the project site.
Floodflow Alteration	<u>X</u>		2, 4, 5, 6, 7, 9, 15	<u>X</u>	Small detention basin. Not associated with a watercourse. Provides Storm water detention.
Fish and Shellfish Habitat		<u>X</u>	None		No finfish habitat is present. No watercourses or waterbodies are associated with this wetland.
Sediment/Toxicant Retention	<u>X</u>		4, 5	<u>X</u>	No significant source of sediments in adjacent watershed. Any sediments could settle out in this wetland.
Nutrient Removal	<u>X</u>		3, 4, 7, 8, 9	<u>X</u>	Nutrients are trapped and removed within this wetland. Dense vegetation.
Production Export		<u>X</u>	1, 2, 7, 14		Nutrients are attenuated by the wetland.
Sediment/Shoreline Stabilization		<u>X</u>	N/A		This wetland is not associated with a watercourse.
Wildlife Habitat	<u>X</u>		2, 13, 16	<u>X</u>	Limited. Mostly maintained lawn area.
Recreation		<u>X</u>	None		Passive only.
Educational Scientific Value	<u>X</u>		8, 9, 10, 16		On school property. Potential for education.
Uniqueness/Heritage		<u>X</u>	8, 17, 18		Wetland is located within a highly disturbed area. Potential for education.
Visual Quality/Aesthetics		<u>X</u>	3, 9		Maintained as a lawn.
ES Endangered Species Habitat		<u>X</u>	None		None observed. CT DEEP Natural Diversity Data Base map indicates no known listed species. See map dated Dec 2018. Appendix II.
Other					

* REFER TO BACK UP LIST OF CONSIDERATIONS (ATTACHED)

Table: WETLAND FUNCTION-VALUE EVALUATION FORM

Wetland Area 3 – Athletic Field Renovation Project Area, University of St. Joseph,

Wetland I.D. West Hartford, CTTotal area of wetland _____ Human made? No Is wetland part of a wildlife corridor? Yes Or a “habitat island”? NoLat. ±41.78563°N Long. ±72.73155°WAdjacent land use: mowed lawn; wooded upland; residences Distance to nearest roadway or development 0' (mowed lawn)Prepared by JLB Date 3/22/19Dominant wetland systems present PEM2E Contiguous undeveloped buffer zone present No (fragmented)

Wetland Impact:

Type: N/A Area 0Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

Evaluation based on:

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (*see attached*) _____Office Y Field Y

Corps manual wetland delineation

Completed? Y _____ N X

Function/Value	Occurrence		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge	<u>X</u>		12, 13, 15	<u>X</u>	Water quality designated as Class GA within the area of the project site.
Floodflow Alteration		<u>X</u>	2, 5		Wetland area can detain limited water. Not associated with a watercourse. Limited watershed.
Fish and Shellfish Habitat		<u>X</u>	None		No finfish habitat is present. No watercourses or waterbodies are associated with this wetland.
Sediment/Toxicant Retention	<u>X</u>		4, 5	<u>X</u>	No significant source of sediments in adjacent watershed. Any sediments could settle out in this wetland.
Nutrient Removal	<u>X</u>		3, 4, 7, 8, 9	<u>X</u>	Nutrients are trapped and removed within this wetland. Dense vegetation.
Production Export		<u>X</u>	1, 2, 4, 7, 12, 14		Nutrients are attenuated by the wetland.
Sediment/Shoreline Stabilization		<u>X</u>	N/A		This wetland is not associated with a watercourse.
Wildlife Habitat	<u>X</u>		2, 8, 13, 14, 16, 17	<u>X</u>	Trees, shrubs, and herbaceous vegetation provide habitat.
Recreation		<u>X</u>	None		Passive only.
Educational Scientific Value	<u>X</u>		8, 9, 10, 16		On school property. Potential for education.
Uniqueness/Heritage		<u>X</u>	8, 17, 18		Wetland is located within a highly disturbed area. Potential for education.
Visual Quality/Aesthetics	<u>X</u>		3, 9		Provides a contrast with the adjacent mowed lawn and development. Some blooms and autumn foliage.
ES Endangered Species Habitat		<u>X</u>	None		None observed. CT DEEP Natural Diversity Data Base map indicates no known listed species. See map dated Dec 2018. Appendix II.
Other					

* REFER TO BACK UP LIST OF CONSIDERATIONS (ATTACHED)

Table: WETLAND FUNCTION-VALUE EVALUATION FORM**Wetland Area 4 – Athletic Field Renovation Project Area, University of St. Joseph,**Wetland I.D. West Hartford, CTTotal area of wetland _____ Human made? No Is wetland part of a wildlife corridor? Yes Or a “habitat island”? NoLat. ±41.78438°N Long. ±72.73166°WAdjacent land use: mowed lawn; wooded upland; residences Distance to nearest roadway or development 0' (lawn)Prepared by JLB Date 3/22/19Dominant wetland systems present PFOIE Contiguous undeveloped buffer zone present No (fragmented)

Wetland Impact:

Type: N/A Area 0Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

Evaluation based on:

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (*see attached*)Office Y Field Y

Corps manual wetland delineation

Completed? Y _____ N X

Function/Value	Occurrence		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge	<u>X</u>		12, 13, 15	<u>X</u>	Water quality designated as Class GA within the area of the project site.
Floodflow Alteration	<u>X</u>		2, 5, 9		Wetland area can detain limited water. Not associated with a watercourse. Limited watershed. Receives storm water runoff via a pipe.
Fish and Shellfish Habitat		<u>X</u>	None		No finfish habitat is present. No watercourses or waterbodies are associated with this wetland.
Sediment/Toxicant Retention	<u>X</u>		4, 5	<u>X</u>	No significant source of sediments in adjacent watershed. Any sediments could settle out in this wetland.
Nutrient Removal	<u>X</u>		3, 4, 7	<u>X</u>	Limited by small size. Nutrients are trapped and removed within this wetland.
Production Export		<u>X</u>	1, 2, 4, 14		Nutrients are attenuated by the wetland.
Sediment/Shoreline Stabilization		<u>X</u>	N/A		This wetland is not associated with a watercourse.
Wildlife Habitat	<u>X</u>		2, 8, 11, 16, 17	<u>X</u>	Limited by small size. Trees and shrubs provide habitat.
Recreation		<u>X</u>	None		Passive only.
Educational Scientific Value	<u>X</u>		8, 9, 10, 16		On school property. Potential for education.
Uniqueness/Heritage		<u>X</u>	8, 17, 18		Wetland is located within a highly disturbed area. Potential for education.
Visual Quality/Aesthetics		<u>X</u>	9		Appears similar to the adjacent wooded upland area.
ES Endangered Species Habitat		<u>X</u>	None		None observed. CT DEEP Natural Diversity Data Base map indicates no known listed species. See map dated Dec 2018. Appendix II.
Other					

* REFER TO BACK UP LIST OF CONSIDERATIONS (ATTACHED)

Table: WETLAND FUNCTION-VALUE EVALUATION FORM

**Wetland Area 5 – Athletic Field Renovation Project Area, University of St. Joseph,
West Hartford, CT**

Wetland I.D. West Hartford, CT

Total area of wetland _____ Human made? No Is wetland part of a wildlife corridor? Yes Or a “habitat island”? No

Adjacent land use: mowed lawn; wooded upland; residences Distance to nearest roadway or development 0' (lawn)

Dominant wetland systems present PFOIE Contiguous undeveloped buffer zone present No (fragmented)

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (*see attached*)

Prepared by JLB Date 3/22/19

Wetland Impact:
Type: N/A Area 0

Evaluation based on:
Office Y Field Y
Corps manual wetland delineation
Completed? Y _____ N X

Function/Value	Occurrence Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X	12, 13, 15	X	Water quality designated as Class GA within the area of the project site.
Floodflow Alteration	X	2, 5, 9		Wetland area can detain limited water (small). Not associated with a watercourse. Limited watershed. Only intermittent outlet.
Fish and Shellfish Habitat		X None		No finfish habitat is present. No watercourses or waterbodies are associated with this wetland.
Sediment/Toxicant Retention	X	4, 5	X	No significant source of sediments in adjacent watershed. Any sediments could settle out in this wetland.
Nutrient Removal	X	3, 4, 7	X	Limited. Small size. Nutrients are trapped and removed within this wetland.
Production Export		X 1, 2, 4, 14		Nutrients are attenuated by the wetland.
Sediment/Shoreline Stabilization		X N/A		This wetland is not associated with a watercourse. Intermittent outlet only.
Wildlife Habitat	X	2, 8, 11, 16, 17	X	Limited by small size. Trees and shrubs provide habitat.
Recreation		X None		Passive only.
Educational Scientific Value	X	8, 9, 10, 16		On school property. Potential for education.
Uniqueness/Heritage		X 8, 17, 18		Wetland is located within a highly disturbed area. Potential for education.
Visual Quality/Aesthetics		X 9		Appears similar to the adjacent wooded upland area.
ES Endangered Species Habitat		X None		None observed. CT DEEP Natural Diversity Data Base map indicates no known listed species. See map dated Dec 2018. Appendix II.
Other				

* REFER TO BACK UP LIST OF CONSIDERATIONS (ATTACHED)

Table: WETLAND FUNCTION-VALUE EVALUATION FORM

Wetland Area 6 (detention basin) – Athletic Field Renovation Project Area, University of St. Joseph,

Total area of wetland _____ Human made? Yes Is wetland part of a wildlife corridor? No Or a “habitat island”? Yes
 Adjacent land use: mowed lawn; road; parking; building Distance to nearest roadway or development 0’ (lawn)
 Dominant wetland systems present PEM2E/PFO1E Contiguous undeveloped buffer zone present No (fragmented)
 Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper
 How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (*see attached*)

Wetland I.D. West Hartford, CT
 Lat. ±41.78360°N Long. ±72.73110°W
 Prepared by JLB Date 3/22/19
 Wetland Impact:
 Type: N/A Area 0
 Evaluation based on:
 Office Y Field Y
 Corps manual wetland delineation
 Completed? Y _____ N X

Function/Value	Occurrence Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X	12, 13, 15		Water quality designated as Class GA within the area of the project site.
Floodflow Alteration	X	2, 4, 5, 6, 7, 9, 15	X	Small detention basin. Not associated with a watercourse. Detains storm water runoff.
Fish and Shellfish Habitat		X None		No finfish habitat is present. No watercourses or waterbodies are associated with this wetland.
Sediment/Toxicant Retention	X	1, 4, 5	X	No significant source of sediments in adjacent watershed. Any sediments could settle out in this wetland.
Nutrient Removal	X	3, 4, 7, 8, 9	X	Nutrients are trapped and removed within this wetland. Dense vegetation.
Production Export		X 1, 2, 7, 14		Nutrients are attenuated by the wetland.
Sediment/Shoreline Stabilization		X N/A		This wetland is not associated with a watercourse.
Wildlife Habitat	X	2, 13, 16	X	Limited. Trees, shrubs and herbaceous vegetation provide habitat.
Recreation		X None		Passive only.
Educational Scientific Value	X	8, 9, 10, 16		On school property. Potential for education.
Uniqueness/Heritage		X 8, 17, 18		Wetland is located within a highly disturbed area. Potential for education.
Visual Quality/Aesthetics	X	3, 9		Possibly some blooms and autumn foliage. Invasive species present.
ES Endangered Species Habitat		X None		None observed. CT DEEP Natural Diversity Data Base map indicates no known listed species. See map dated Dec 2018. Appendix II.
Other				

* REFER TO BACK UP LIST OF CONSIDERATIONS (ATTACHED)

Dominant Wetland Vegetation Inventory (March 19, 2019)

University of St. Joseph Athletic Field Improvement Project Area

Scientific Name	Common Name	Indicator Status	Wetland Area
Trees			
<i>Acer rubrum</i>	red maple	FAC	1, 4, 5, 6
<i>Malus sp.</i>	crabapple	UPL	4
<i>Populus deltoids</i>	cottonwood	FAC	1, 2
<i>Quercus palustris</i>	pin oak	FACW	1, 3, 4, 5, 6
<i>Salix</i>	willow	FACW	6
Saplings/Shrubs			
<i>Acer rubrum</i>	red maple	FAC	3
<i>Clethra alnifolia</i>	sweet pepperbush	FAC	2
<i>Cornus amomum</i>	silky dogwood	FACW	1, 2, 3, 4, 5, 6
<i>Cornus sp.</i>	dogwood	-----	1
<i>Lindera benzoin</i>	spicebush	FACW-	2
<i>Lonicera tatarica</i>	honeysuckle	FACU	5
<i>Malus sp.</i>	crabapple	UPL	1
<i>Pinus strobus</i>	white pine	UPL	3
<i>Rosa multiflora</i>	multiflora rose	FACU	3, 4, 5, 6,
<i>Spiraea tomentosa</i>	steepleshub	FACW	1
<i>Vaccinium corymbosum</i>	highbush blueberry	FACW	1, 2
Herbaceous			
<i>Asclepias incarnata</i>	swamp milkweed	OBL	1, 3
<i>Aster sp.</i>	aster	-----	3, 4, 6
<i>Carex sp.</i>	sedges	-----	1, 2, 3, 6
<i>Carex stricta</i>	tussock sedge	OBL	3
<i>Epilobium sp.</i>	willowherb	FACW/OBL	1, 3, 5
<i>Juncus effuses</i>	soft rush	FACW	1, 3
<i>Lythrum salicaria</i>	purple loosestrife	OBL	1
<i>Onoclea sensibilis</i>	sensitive fern	FACW	1, 3, 6
<i>Phragmites australis</i>	common reedgrass	FACW	6
<i>Solidago sp.</i>	goldenrod	-----	2, 3, 4
<i>Verbascum thapsus</i>	common mullein	UPL	1
<i>Verbena hastata</i>	blue vervain	FACW	1, 3

Indicator Status : Taken from the "National List of Plant Species that Occur in Wetlands:1988 National Summary," Fish and Wildlife Service, U.S. Department of the Interior


- OBL:** obligate wetland; occur almost always under natural conditions in wetlands
FACW: facultative wetland; usually occur in wetlands , but occasionally found in non-wetlands
 equally likely to occur in wetlands or non-wetlands
UPL: occur almost always under natural conditions in non-wetlands
+ : more frequently found in specified condition
- : less frequently found in specified condition

Inspection was conducted during non-growing season conditions. Inventory includes the dominant species that were identified during the inspection. This list is not comprehensive.

Dominant Wildlife Inventory (March 19, 2019)
University of St. Joseph Athletic Field Improvement Project Area

<i>Agelaius phoeniceus</i>	red-winged blackbird
<i>Cardinalis cardinalis</i>	Northern cardinal
<i>Corvus brachyrhynchos</i>	American crow
<i>Cyanocitta cristata</i>	blue jay
<i>Junco hyemalis</i>	dark-eyed junco
<i>Melospiza melodia</i>	song sparrow
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Parus atricapillus</i>	black-capped chickadee
<i>Scolopax minor</i>	American woodcock
<i>Sciurus carolinensis</i>	gray squirrel
<i>Sturnus vulgaris</i>	European starling
<i>Turdus migratorius</i>	American robin
<i>Zenaida macroura</i>	mourning dove

Inventory includes the species that were observed during the March 19, 2019 inspection and is not a comprehensive list of wildlife that could utilize the project area.



Appendix A

Wetland evaluation supporting documentation and reproducible forms.

Below is an example list of considerations that was used for a New Hampshire highway project. Considerations are flexible, based on best professional judgement and interdisciplinary team consensus. This example provides a comprehensive base, however, and may only need slight modifications for use in other projects.



GROUNDWATER RECHARGE/DISCHARGE— This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

CONSIDERATIONS/QUALIFIERS

1. Public or private wells occur downstream of the wetland.
2. Potential exists for public or private wells downstream of the wetland.
3. Wetland is underlain by stratified drift.
4. Gravel or sandy soils present in/or adjacent to the wetland.
5. Fragipan does not occur in the wetland.
6. Fragipan, impervious soils, or bedrock, does occur in the wetland.
7. Wetland is associated with a perennial or intermittent watercourse.
8. Signs of groundwater recharge are present or piezometer data demonstrates recharge.
9. Wetland is associated with a watercourse, but lacks a defined outlet or contains a constricted outlet.
10. Wetland contains only an outlet.
11. Groundwater quality of stratified drift aquifer within or downstream of wetland meets drinking water standards.
12. Quality of water associated with the wetland is high.
13. Signs of groundwater discharge are present (e.g. springs).
14. Water temperature suggests it is a discharge site.
15. Wetland shows signs of variable water levels.
16. Gravel or sandy soils present in or adjacent to wetland.
17. Piezometer data demonstrates discharge.
18. Other



FLOODFLOW ALTERATION (Storage & Desynchronization) — This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

CONSIDERATIONS/QUALIFIERS

1. Area of this wetland is large relative to its watershed.
2. Wetland occurs in the upper portions of its watershed.
3. Effective flood storage is small or non-existent upslope of or above the wetland.
4. Wetland watershed contains a high degree of impervious surfaces.
5. Wetland contains hydric soils which are able to absorb and detain water.
6. Wetland exists in a relatively flat area that has flood storage potential.
7. Wetland has an intermittent outlet, ponded water, or signs are present of variable water level.
8. During flood events, this wetland can retain higher volumes of water than under normal or average rainfall conditions.
9. Wetland receives and retains overland or sheet flow runoff from surrounding uplands.
10. In the event of a large storm, this wetland may receive and detain excessive flood water from a nearby watercourse.
11. Valuable properties, structures or resources are located in or near the floodplain downstream from the wetland.
12. The watershed has a history of economic loss due to flooding.
13. This wetland is associated with one or more watercourses.
14. This wetland watercourse is sinuous or diffuse.
15. This wetland outlet is constricted.
16. Channel flow velocity is affected by this wetland.
17. Land uses downstream are protected by this wetland.
18. This wetland contains a high density of vegetation.
19. Other

FISH AND SHELLFISH HABITAT — This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

CONSIDERATIONS/QUALIFIERS

1. Forest land dominant in the watershed above this wetland.
2. Abundance of cover objects present.
3. **STOP HERE IF THIS WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE**
4. Size of this wetland is able to support large fish/shellfish populations.
5. Wetland is part of a larger, contiguous watercourse.
6. Wetland has sufficient size and depth in open water areas so as not to freeze solid and retains some open water during winter.
7. Stream width (bank to bank) is more than 50 feet.
8. Quality of the watercourse associated with this wetland is able to support healthy fish/shellfish populations.
9. Streamside vegetation provides shade for the watercourse.
10. Spawning areas are present (submerged vegetation or gravel beds).
11. Food is available to fish/shellfish populations within this wetland.
12. Barrier(s) to anadromous fish (such as dams, including beaver dams, water falls, road crossing, etc.) are absent from the stream reach associated with this wetland.
13. Evidence of fish is present.
14. Wetland is stocked with fish.
15. The watercourse is persistent.
16. Man-made streams are absent.
17. Water velocities are not too excessive for fish usage.
18. Defined stream channel is present.
19. Other

SEDIMENT/TOXICANT/PATHOGEN RETENTION — This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands, or upstream erod-



ing wetland areas.

CONSIDERATIONS/QUALIFIERS

1. Potential sources of excess sediment are in the watershed above the wetland.
2. Potential or known sources of toxicants are in the watershed above the wetland.
3. Opportunity for sediment trapping by slow moving water or deepwater habitat are present in this wetland.
4. Mineral, fine grained, or organic soils are present.
5. Long duration water retention time is present in this wetland.
6. Public or private water sources occur downstream.
7. The wetland edge is broad and intermittently aerobic.
8. The wetland is known to have existed for more than 50 years.
9. Drainage ditches have not been constructed in the wetland.

STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.

10. Wetland is associated with an intermittent or perennial stream, or a lake.
11. Channelized flows have visible velocity decreases in the wetland.
12. Effective floodwater storage in wetland is occurring. Areas of impounded open water are present.
13. No indicators of erosive forces are present. No high water velocities are present.
14. Diffuse water flows are present in the wetland.
15. Wetland has a high degree of water and vegetation interspersion.
16. Dense vegetation provides opportunity for sediment trapping and/or signs of sediment accumulation is present by dense vegetation.
17. Other



NUTRIENT REMOVAL/RETENTION/TRANSFORMATION — This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands, and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries.

CONSIDERATIONS/QUALIFIERS

1. Wetland is large relative to the size of its watershed.
 2. Deep water or open water habitat exists.
 3. Overall potential for sediment trapping exists in the wetland.
 4. Potential sources of excess nutrients present in the watershed above the wetland.
 5. Wetland saturated for most of the season. Pooled water is present in the wetland.
 6. Deep organic/sediment deposits are present.
 7. Slowly drained mineral, fine grained, or organic soils, are present.
 8. Dense vegetation is present.
 9. Emergent vegetation and/or dense woody stems are dominant.
 10. Aquatic diversity/abundance sufficient to utilize nutrients.
 11. Opportunity for nutrient attenuation exists.
 12. Vegetation diversity/abundance sufficient to utilize nutrients.
- STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.**
13. Waterflow through this wetland is diffuse.
 14. Water retention/detention time in this wetland is increased by constricted outlet or thick vegetation.
 15. Water moves slowly through this wetland.
 16. Other



PRODUCTION EXPORT (Nutrient) — This function evaluates the effectiveness of the wetland to produce food or usable products for man or other living organisms.

CONSIDERATIONS/QUALIFIERS

1. Wildlife food sources grow within this wetland.
2. Detritus development is present within this wetland.
3. Economically or commercially used products found in this wetland.

4. Evidence of wildlife use found within this wetland.
5. Higher trophic level consumers are utilizing this wetland.
6. Fish or shellfish develop or occur in this wetland.
7. High vegetation density is present.
8. Wetland exhibits high degree of plant community structure/species diversity.
9. High aquatic diversity/abundance is present.
10. Nutrients exported in wetland watercourses (permanent outlet present).
11. "Flushing" of relatively large amounts of organic plant material occurs from this wetland.
12. Wetland contains flowering plants which are used by nectar-gathering insects.
13. Indications of export are present.
14. High production levels occurring however, no visible signs of export (assumes export is attenuated).
15. Other

SEDIMENT/ShORELINE STABILIZATION — This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.



CONSIDERATIONS/QUALIFIERS

1. Indications of erosion, siltation present.
2. Topographical gradient is present in wetland.
3. Potential sediment sources are present up-slope.
4. No distinct shoreline or bank is evident between the waterbody and the wetland or upland.
5. A distinct strip between the open waterbody or stream and the adjacent land exists (i.e. sharp bank) with dense roots throughout.
6. Wide wetland (>10') bordering watercourse, lake, or pond.
7. High flow velocities in the wetland.
8. Potential sediment sources present upstream.
9. The watershed is of sufficient size to produce channelized flow.
10. Open water fetch is present.
11. Boating activity is present.
12. Dense vegetation is bordering watercourse, lake, or pond.
13. High percentage of energy absorbing emergents and/or shrubs bordering watercourse, lake or pond.
14. Vegetation comprised of large trees and shrubs which withstand major flood events or erosive incidents and stabilize the shoreline on a large scale (feet).
15. Vegetation comprised of dense resilient herbaceous layer which stabilizes sediments and the shoreline on a small scale (inches) during minor flood events or potentially erosive events.
16. Other

WILDLIFE HABITAT — This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered. Species lists of observed and potential animals should be included in the wetland assessment report.²



CONSIDERATIONS/QUALIFIERS

1. Wetland is not degraded by human activity.
2. Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.
3. Wetland is not fragmented by development.
4. Upland surrounding this wetland is undeveloped.
5. More than 40% of this wetland edge is bordered by upland wildlife habitat (e.g. brushland, wood land, active farmland, or idle land) at least 500 feet in width.
6. Wetland contiguous with other wetland systems connected by watercourse or lake.
7. Wildlife overland access to other wetlands is present.
8. Wildlife food sources are within this wetland or are nearby.

9. Wetland exhibits a high degree of interspersed vegetation classes and/or open water.
10. Two or more islands or inclusions of upland within the wetland are present.
11. Dominant wetland class includes deep or shallow marsh or wooded swamp.
12. More than three acres of shallow permanent open water (less than 6.6 feet deep), including streams in or adjacent to wetland are present.
13. Density of the wetland vegetation is high.
14. Wetland exhibits a high degree of plant species diversity.
15. Wetland exhibits a high degree of diversity in plant community structure (e.g. tree/shrub/vine /grasses/mosses/etc.)
16. Plant/animal indicator species present.
17. Animal signs observed (tracks, nests, nesting areas, etc.)
18. Seasonal uses vary for wildlife, and wetland appears to support varied population diversity/abundance during different seasons.
19. Wetland contains or has potential to contain a high population of insects.
20. Wetland contains or has potential to contain large amphibian populations.
21. Wetland has a high avian utilization or its potential.
22. Indications of less disturbance-tolerant species present.
23. Signs of wildlife habitat enhancement present (birdhouses, nesting boxes, food sources, etc.).
24. Other



RECREATION (Consumptive and Non-Consumptive) — This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish these resources of the wetland.

CONSIDERATIONS/QUALIFIERS

1. Wetland is part of a recreation area, park, forest, or refuge.
2. Fishing is available within or from the wetland.
3. Hunting is permitted in the wetland.
4. Hiking occurs or has potential to occur within the wetland.
5. Wetland is a valuable wildlife habitat.
6. The watercourse, pond, or lake, associated with the wetland is unpolluted.
7. High visual/aesthetic quality of this potential recreation site.
8. Access to water is available at this potential recreation site for boating, canoeing, or fishing.
9. The watercourse associated with this wetland is wide and deep enough to accommodate canoeing and/or non-powered boating.
10. Off-road public parking available at the potential recreation site.
11. Accessibility and travel ease is present at this site.
12. The wetland is within a short drive or safe walk from highly populated public and private areas.
13. Other



EDUCATIONAL/SCIENTIFIC VALUE — This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

CONSIDERATIONS/QUALIFIERS

1. Wetland contains or is known to contain threatened, rare, or endangered species.
2. Little or no disturbance is occurring in this wetland.
3. Potential educational site contains a diversity of wetland classes which are accessible or potentially accessible.
4. Potential educational site is undisturbed and natural.
5. Wetland is considered to be a valuable wildlife habitat.

6. Wetland is located within a nature preserve or wildlife management area.
7. Signs of wildlife habitat enhancement present (bird houses, nesting boxes, food sources, etc.).
8. Off-road parking at potential educational site suitable for school bus access in or near wetland.
9. Potential educational site is within safe walking distance or a short drive to schools.
10. Potential educational site within safe walking distance to other plant communities.
11. Direct access to perennial stream at potential educational site available.
12. Direct access to pond or lake at potential educational site available.
13. No known safety hazards within the potential educational site.
14. Public access to the potential educational site is controlled.
15. Handicap accessibility is available.
16. Site is currently used for educational or scientific purposes.
17. Other

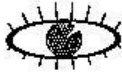
UNIQUENESS/HERITAGE — This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation, and habitat diversity.



CONSIDERATIONS/QUALIFIERS

1. Upland surrounding wetland primarily urban.
2. Upland surrounding wetland developing rapidly.
3. More than 3 acres of shallow permanent open water occur in wetlands (less than 6.6 feet deep) including streams.
4. Three or more wetland classes present.
5. Deep and/or shallow marsh, or wooded swamp dominate.
6. High degree of interspersed vegetation and/or open water occurring in this wetland.
7. Well-vegetated stream corridor (15 feet on each side of the stream) occurs in this wetland.
8. Potential educational site is within a short drive or a safe walk from schools.
9. Off-road parking at potential educational site is suitable for school buses.
10. No known safety hazards exist within this potential educational site.
11. Direct access to perennial stream or lake at potential educational site.
12. Two or more wetland classes visible from primary viewing locations.
13. Low-growing wetlands (marshes, scrub-shrub, bogs, open water) visible from primary viewing locations.
14. Half an acre of open water or 200 feet of stream is visible from the primary viewing locations.
15. Large area of wetland is dominated by flowering plants, or plants which turn vibrant colors in different seasons.
16. General appearance of the wetland visible from primary viewing locations is unpolluted and/or undisturbed.
17. Overall view of the wetland is available from the surrounding upland.
18. Quality of the water associated with the wetland is high.
19. Opportunities for wildlife observations are available.
20. Historical buildings occur within the wetland.
21. Presence of pond or pond site and remains of a dam occur within the wetland.
22. Wetland within 50 yards of the nearest perennial watercourse.
23. Visible stone or earthen foundations, berms, dams, standing structures or associated features occur within the wetland.
24. Wetland contains critical habitat for a state or federally listed threatened or endangered species.
25. Wetland is known to be a study site for scientific research.
26. Wetland is a natural landmark or recognized by the state natural heritage inventory authority as an exemplary natural community.
27. Wetland has local significance because it serves several functional values.

28. Wetland has local significance because it has biological, geological, or other features which are locally rare or unique.
29. Wetland is known to contain an important archaeological site.
30. Wetland is hydrologically connected to a state or federally designated scenic river.
31. Wetland is located in an area experiencing a high wetland loss rate.
32. Other



VISUAL QUALITY/AESTHETICS — This value considers the visual and aesthetic quality or usefulness of the wetland.

CONSIDERATIONS/QUALIFIERS

1. Multiple wetland classes visible from primary viewing locations.
2. Emergent marsh and/or open water visible from primary viewing locations.
3. Diversity of vegetation species visible from primary viewing locations.
4. Wetland dominated by flowering plants, or plants which turn vibrant colors in different seasons.
5. Land use surrounding the wetland is undeveloped as seen from primary viewing locations.
6. Visible surrounding land use form contrasts with wetland.
7. Wetland views absent of trash, debris, and signs of disturbance.
8. Wetland is considered to be a valuable wildlife habitat.
9. Wetland is easily accessed.
10. Low noise level at primary viewing locations.
11. Unpleasant odors absent at primary viewing locations.
12. Relatively unobstructed sight line exists through wetland.
13. Other

ES

ENDANGERED SPECIES HABITAT — This value considers the suitability of the wetland to support threatened or endangered species.

CONSIDERATIONS/QUALIFIERS

1. Wetland contains or is known to contain threatened or endangered species.
2. Wetland contains critical habitat for a state or federally listed threatened or endangered species.
3. Other

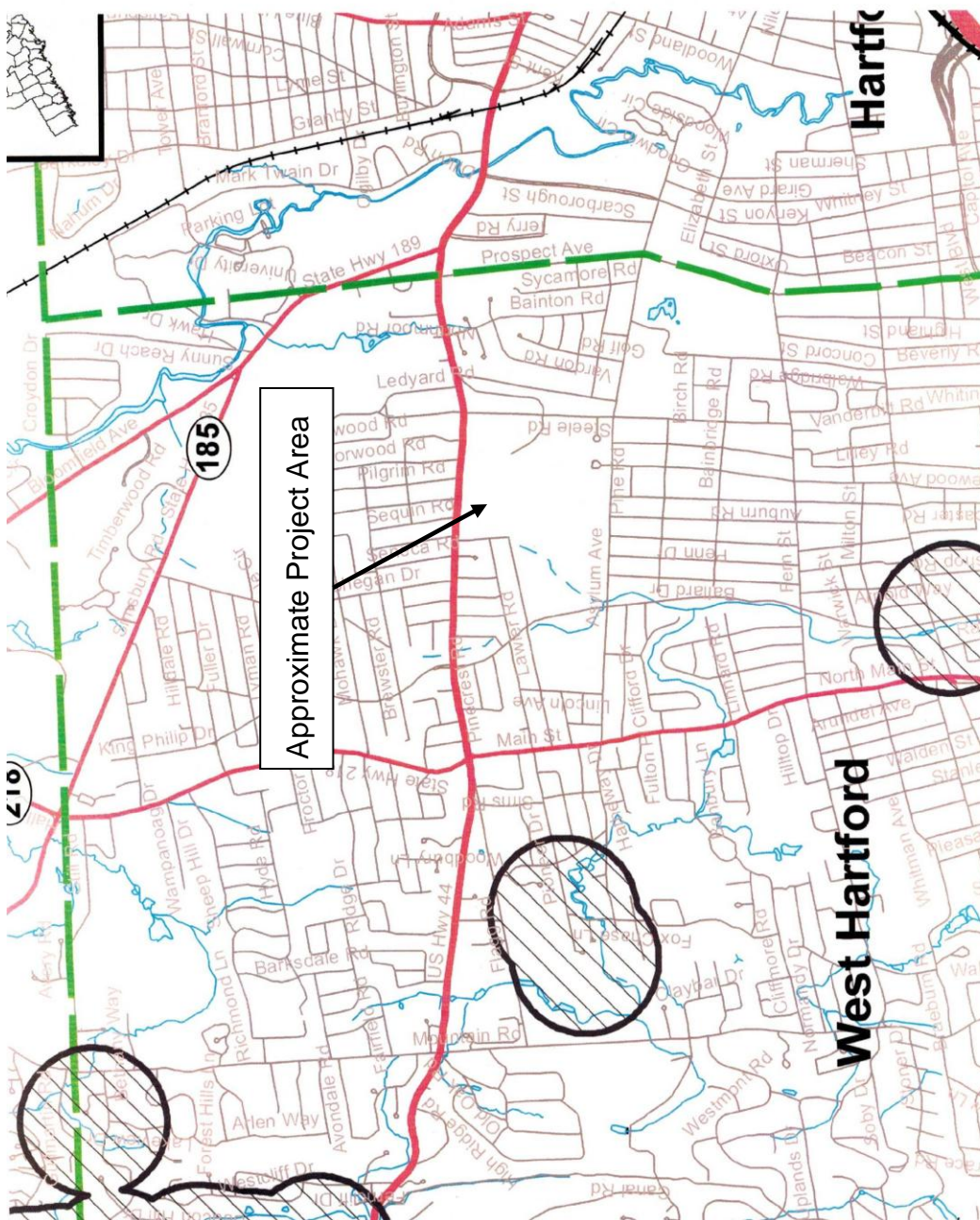
1. Although the above example refers to freshwater wetlands, it can also be adapted for marine ecosystems. Below is an example of an adaptation for the fish and shellfish function provided by the National Marine Fisheries Service.

FISH AND SHELLFISH HABITAT ---- This function considers the effectiveness of wetlands, embayments, tidal flats, vegetated shallows, and other environments in supporting marine resources such as fish, shellfish, marine mammals, and sea turtles.

CONSIDERATIONS/QUALIFIERS (Marine)

1. Special aquatic sites (tidal marsh, mud flats, eelgrass beds) are present.
 2. Suitable spawning habitat is present at the site or in the area.
 3. Commercially or recreationally important species are present or suitable habitat exists.
 4. The wetland/waterway supports prey for higher trophic level marine organisms.
 5. The waterway provides migratory habitat for anadromous fish.
 6. Other
-
2. In March 1995 a rapid wildlife habitat assessment method was completed by a University of Massachusetts research team, with funding and oversight provided by the New England Transportation Consortium. The method is called WEThings (wetland habitat indicators for non- game species). It produces a list of potential wetland- dependent mammals, reptiles, and amphibian species that may be present in the wetland. The output is based on observable habitat characteristics documented on the field data form. This method may be used to generate the wildlife species list recommended as backup information to the wetland evaluation form, and to augment the considerations. Use of this method should first be coordinated with the Corps project manager. A computer program is also available to expedite this process.

Appendix II: Natural Diversity Data Base Map



Portion of State of CT DEEP Natural Diversity Data Base Map, West Hartford, CT
Dated December 2018

Map indicates no known populations of Endangered, Threatened or Special Concern Species or significant natural communities on the study area.